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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,716

04/11/2006

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3724.1004-000

1522

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7590

05/21/2009

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EXAMINER

NWAONICHA, CHUKWUMA O

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

05/21/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Current Status

1. This action is responsive to Applicants' amendment of 23 March 2009.
2. Receipt and entry of Applicants' amendment is acknowledged.
3. Claims 22-24, 32 and 39-43 are actively pending in the application.
4. The rejection of claims 22-24 and 39-43 under 35 U.S.C. 102(a) as being anticipated by Mekis et al., {One-Pot Synthesis of Highly Luminescent CdSe/CdS Core-Shell Nanocrystals via Organometallic and "Greener" Chemical Approaches, Journal of Physical Chemistry B (2003), 107(30), 7454-7462} for the reasons set forth in the previous Office Action of 12/19/2008 is withdrawn because the prior art does not anticipates or renders obvious the claimed invention.

The rejection claims 22-24 and 39-43 under 35 U.S.C. 102(a) as being anticipated by Riwozki et al, {Liquid-phase synthesis of colloids and redispersible powders of strongly luminescing LaPO₄:Ce,Tb nanocrystals, Angewandte Chemie, International Edition (2001), 40(3), 573-576} for the reasons set forth in the previous Office Action of 12/19/2008 is withdrawn in favor of a new rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 32 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 32 is rejected because the variables DCy and CCy are confusing. It is not clear what cyclic group with a donor atom Applicants are claiming. Also, the variables R⁴, R⁵, R⁶ and R¹¹ are not in the formulas 49-52. Correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 22-24, 32 and 39-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Riwozki et al, {Liquid-phase synthesis of colloids and redispersible powders of strongly luminescing LaPO₄:Ce,Tb nanocrystals, *Angewandte Chemie*, International Edition (2001), 40(3), 573-576} or lacconi et al., {Thermoluminescence of a

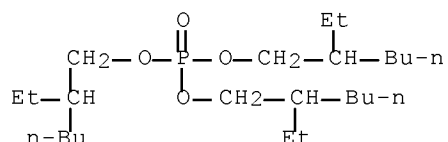
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mixed rare earth phosphate powder $\text{La}_{1-x-y}\text{Ce}_x\text{Tb}_y\text{PO}_4$, Optical Materials (Amsterdam, Netherlands) (2001), 17(3), 409-414}.

Applicants claim a mixture comprising at least one matrix material A and emission material B, and electronic component comprising the mixture; wherein all the variables are as defined in the claims.

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Riwotzki et al. teach a mixture comprising the compound employed in electronic component shown below and emission material B: $\text{LaPO}_4\text{:Ce,Tb}$.



Ascertainment of the difference between the prior art and the claims (M.P.E.P. §2141.02)

Riwotzki et al. mixture differs from the instantly claimed mixture in that Riwotzki et al. mixture is subgenus of the instantly claimed mixture. Specifically, Applicants claim a mixture wherein the emission material B, which is capable of emission contain compounds with element of atomic number greater than 56 and less than 80, or selected from molybdenum, tungsten, rhenium, ruthenium, osmium, rhodium, iridium, palladium, platinum, silver, gold or europium while Riwotzki et al. teach a mixture wherein the emission material B is $\text{LaPO}_4\text{:Ce,Tb}$.

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Finding of prima facie obviousness--rational and motivation (M.P.E.P.. §2142-2143)

The instantly claimed mixture would have been suggested to one of ordinary skill because one of ordinary skill wishing to obtain mixture capable of emission is taught to select the elements from the teaching of Riwotzki et al.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the elements from the teaching of Riwotzki et al. to arrive at the instantly claimed mixture. Said person would have been motivated to practice the teachings of the reference cited because it demonstrates that mixtures capable of emission are useful in industrial application. The instantly claimed invention would therefore have been obvious to one of ordinary skill in the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Sullivan can be reached on 571-272-0779. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

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/Chukwuma O. Nwaonicha/
Examiner, Art Unit 1621

/Karl J. Puttlitz/
Primary Examiner, Art Unit 1621